UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/623,914	07/21/2003	Thomas M. Hering	27708/04065	5367

24024   7590   06/11/2007

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ART UNIT	PAPER NUMBER
1636	

MAIL DATE	DELIVERY MODE
06/11/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>20 March 2007</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>8-14 and 35-37</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) <u>8-13 and 36</u> is/are allowed.

6)☒ Claim(s) <u>14 and 35</u> is/are rejected.

7)☒ Claim(s) <u>37</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>20 March 2007</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some *   c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☒ Other: *Exhibits I and II*.

DETAILED ACTION

This action is in response to the amendment, filed 3/20/2007, in which claims 1-7 and 15-34 were canceled, claims 8-14 were amended, and claims 35-37 were newly added. Currently, claims 8-14 and 35-37 are pending.

Applicant's arguments have been thoroughly reviewed, but are not persuasive for the reasons that follow. Any rejections and objections not reiterated in this action have been withdrawn. **This action is FINAL.**

Election/Restrictions

Applicant elected Group without traverse in the reply filed on 8/11/2006. Claims 8-14 and 35-37 are currently under consideration.

Specification

The disclosure is objected to because of the following informalities:

The specification indicates that the sequence presented in Figure 6 is disclosed in SEQ ID NO: 4 and is encoded by SEQ ID NO: 3 (e.g. paragraphs [0031 and [0056]). However, the sequence of SEQ ID NO: 3 does not encode the sequence of SEQ ID NO: 4 (see the attached alignment in Exhibit I).

Appropriate correction is required. This is a new objection, necessitated by the amendment to the sequence listing in the reply filed 3/20/2007.

Claim Objections

Claim 14 is objected to because of the following informalities: the word "and" should be placed before item (b) in the Markush-type group to conform to the accepted language. One acceptable form of alternative expression, which is commonly referred to as a Markush group, recites members as being "selected from the group consisting of A, B and C." See *Ex parte Markush*, 1925 C.D. 126 (Comm'r Pat. 1925). Appropriate correction is required. This is a new objection, necessitated by the amendment of claim 14 in the reply filed 3/20/2007.

Claim 37 is objected to because of the following informalities: the verb does not agree with the subject. It would be remedial to amend the claim to replace the word "are" with the word "is" to improve the grammar of the claim. Appropriate correction is required. This is a new objection, necessitated by the addition of new claim 37 in the reply filed 3/20/2007.

Response to Arguments - 35 USC § 112

The rejection of claims 8-13 under 35 U.S.C. 112, second paragraph, has been withdrawn in view of Applicant's amendment to the sequence listing in the reply filed 3/20/2007.

The rejection of claims 8-12 and 14 under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement, has been withdrawn in view of Applicant's amendment to the claims in the reply filed 3/20/2007.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 14 and 35 are rejected under 35 U.S.C. 102(a) as being anticipated by GenBank Accession No. AC011508.1 (GI: 6015244, October 7, 1999; see the entire reference). This rejection was made over claim 14 in the Office action mailed 10/18/2006. The rejection has been rewritten to address amended claim 14 and has been extended to new claim 35.

Regarding claim 14, GenBank Accession No. AC011508 teaches a polynucleotide that comprises a fragment of at least 210 nucleotides in length and is identical to a sequence within nucleotides 25-1581 of SEQ ID NO: 3 (see the alignment in Exhibit II). GenBank Accession No. AC011508.1 teaches a sequence that is at least 210 nucleotides in length and is identical to a nucleotide sequence extending from nucleotide 196 through nucleotide 521 of GenBank Accession No. AC011508.1 (see the alignment in Exhibit II).

Regarding claim 35, GenBank Accession No. AC011508 teaches a polynucleotide that comprises a fragment of at least 210 nucleotides in length and is identical to a sequence within nucleotides 163-423 of SEQ ID NO: 3 (see the alignment in Exhibit II). GenBank Accession No. AC011508.1 teaches a sequence that is at least 210 nucleotides in length and is identical to a nucleotide sequence extending from nucleotide 196 through nucleotide 521 of GenBank Accession No. AC011508.1 (see the alignment in Exhibit II).

Response to Arguments - 35 USC § 102

The rejection of claims 8-10, 12 and 14 under 35 U.S.C. 102(e) as being anticipated by

Brennan et al (US 5,985,551) has been withdrawn in view of Applicant's amendment to the

claims in the reply filed 3/20/2007.

The rejection of claims 8-12 under 35 U.S.C. 102(a) as being anticipated by GenBank

Accession No. AC011508.1 (GI: 6015244, October 7, 1999) has been withdrawn in view of

Applicant's amendment to the claims in the reply filed 3/20/2007. The nucleotide sequence of

GenBank Accession No. AC011508.1 does not encode a protein that is at least 90% identical to

the full-length sequence of SEQ ID NO: 4 and does not contain the full-length coding sequence

set forth in SEQ ID NO: 3.

With respect to the rejection of claim 14 35 U.S.C. 102(a) as being anticipated by

GenBank Accession No. AC011508.1 (GI: 6015244, October 7, 1999), Applicant's arguments

filed 3/20/2006 have been fully considered but they are not persuasive.

The response asserts that the amendment of claim 14 to recite that the polynucleotide is at

least 210 nucleotides in length and has a sequence that is identical to or complementary to a

sequence extending from nucleotide 25 through nucleotide 1581 of SEQ ID NO: 3 overcomes

the rejection. This is not found persuasive, because GenBank Accession No. AC011508.1

teaches a sequence that is at least 210 nucleotides in length and is identical to a nucleotide

sequence extending from nucleotide 196 through nucleotide 521 of GenBank Accession No.

AC011508.1 (see the alignment in Exhibit II). This sequence is more than 210 nucleotides in

length.

For these reasons, and the reasons made of record in the previous office actions, the rejection is maintained.

Conclusion

Claims 8-13 and 36 are allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer Dunston whose telephone number is 571-272-2916. The examiner can normally be reached on M-F, 9 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Woitach can be reached on 571-272-0739. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jennifer Dunston
Examiner
Art Unit 1636

/JD/

CELINE QIAN, PH.D.
PRIMARY EXAMINER

NCBI **Blast 2 Sequences results**

PubMed   Entrez   BLAST   OMIM   Taxonomy   Structure

BLAST 2 SEQUENCES RESULTS VERSION BLASTN 2.2.16 [Mar-25-2007]

Match: `1` Mismatch: `-2` gap open: `5` gap extension: `2`

x_dropoff: `0` expect: `10.0000` wordsize: `11` Filter ☐ View option `Standard` ▼

Masking character option `X for protein, n for nucleotide` ▼ Masking color option `Black` ▼

☐ Show CDS translation `Align`

Sequence 1: lcl|3   SEQ ID NO:3
Length = 2143 (1 .. 2143)

Sequence 2: gi|6015244|gb|AC011508.1|AC011508
Length = 104342 (1 .. 104342)
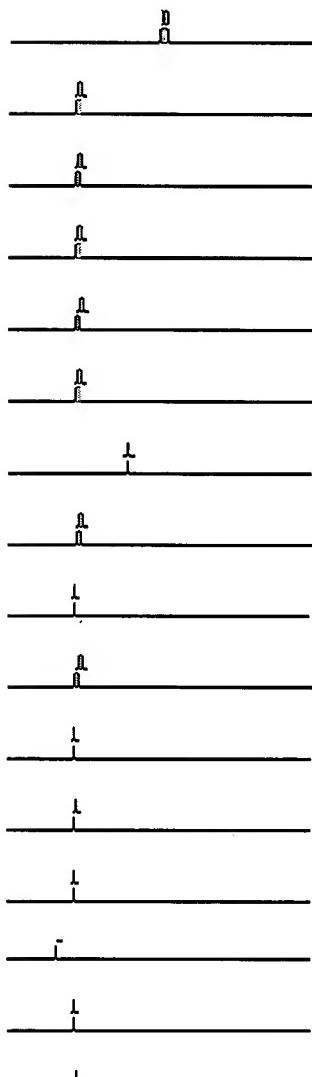
2
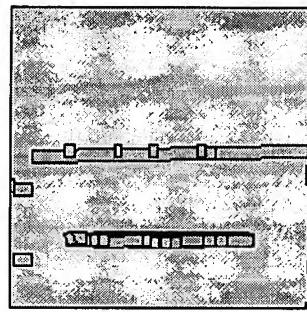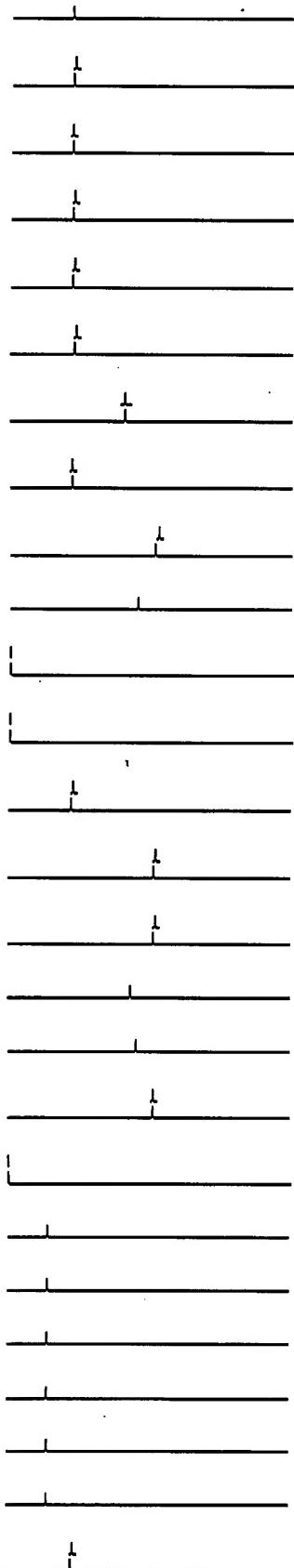
1

NOTE:Bitscore and expect value are calculated based on the size of the nr database.

NOTE:If protein translation is reversed, please repeat the search with reverse strand of the query sequence.

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 Identities = 1948/1958 (99%), Gaps = 1/1958 (0%)
 Strand=Plus/Plus

Query  160    GATTTGGAGTCAAAAACGTATGAGACCAAAAAATATTTTTCAGAAAATGATATTTTTGAA    219
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Query  220    ATAAATTTTTCCCAGTGGGAGATGAAGGACAAAAGTAAAACCCTTGGCCTTGAGGCATCC   279
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Sbjct  52415  ATAAATTTTTCCCAGTGGGAGATGAAGGACAAAAGTAAAACCCTTGGCCTTGAGGCATCC   52474

Query  280    ATCTTCAGAAATAATTGGAAGTGCAAAAGCATATTCGAGGGACTAAAAGGACATCAAGAG   339
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Query  340    GGATACTTCAGTCAAATGATAATCAGCTATGAAAAAATACCTTCTTACAGAAAAGTAAA   399
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Sbjct  52595  TCTCTTACTCCACATCAAAGAATTCATAATACAGAGAAATCCTATGTTTGTAAGGAATGT   52654

Query  460    GGGAAGGCTTGCAGTCATGGCTCAAAACTTGTTCAACATGAGAGAACTCATACAGCTGAA   519
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Query   880    GGGAAGGCCTTCAGTCGTGGCTATCAACTTACTCAGCATCAGAAAATCCATACTGGTAAG   939
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Query   940    AAACCTTATGAATGTAAAATATGTGGAAAGGCTTTTTGTTGGGGCTATCAACTTACTCGA   999
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Query   1000   CATCAGATATTTCATACTGGTGAGAAACCCTATGAATGCAAGGAATGTGGGAAGGCTTTT   1059
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Query   1060   AATTGCGGATCAAGTCTTATTCAACATGAAAGAATTCATACTGGTGAGAAACCTTATGAA   1119
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Query   1120   TGTAAAGAATGTGGAAAGGCCTTTAGTCGTGGCTATCACCTTTCTCAACATCAGAAAATC   1179
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Query   1300   GGAAAGACCTTTTGTAGTGGGTATCAACTTACTCGACATCAGGTATTTCACACTGGTGAG   1359
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Sbjct   53495  GGAAAGACCTTTTGTAGTGGGTATCAACTTACTCGACATCAGGTATTTCACACTGGTGAG   53554

Query   1360   AAACCCTATGAATGTAAGGAATGTGGGAAGGCTTTTAATTGTGGATCAAGCCTTGTTCAA   1419
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Query   1599   CATACTAATGAGAAGTCTTATGAATGTAAAGACTGTGGGAAGGCCTTTGGTAGTGGCTAT   1658
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Query    1899   AGACAACTTATCATAATAAGAACTCTTACTCTTGAGAAACCTTGTGAATGTAAGGGTTGT   1958
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Query    1959   GCAAAAGCCATTCATTTCTGTTTATGGGCAATTATCTTGCTATCCAGCAATTCATACTAG   2018
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Sbjct   54155   GCAAAAGCCATTCATTTCTGTTTATGGGCAATTATCTTGCTATCCAGCAATTCATACTAG   54214

Query    2019   TGAGAAATATTTTGAATATAATTAATATGAAAAGGCCTTTAGACTTCTGTACAGTCTTAT   2078
                |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Sbjct   54215   TGAGAAATATTTTGAATATAATTAATATGAAAAGGCCTTTAGACTTCTGTACAGTCTTAT   54274

Query    2079   TGGATATCAATTTATACTGATGTAAAATCATTTAAATG        2116
                ||||||||||||||||||||||||||||||||||||||
Sbjct   54275   TGGATATCAATTTATACTGATGTAAAATCATTTAAATG        54312
```

Score = 406 bits (211), Expect = 2e-109
Identities = 618/819 (75%), Gaps = 1/819 (0%)
Strand=Plus/Plus

```
Query     748   CATCAGAAAATTCATATTGGTGTGAAATCTTATAAATGTAAGGAATGTGGGAAGGCCTTT   807
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Sbjct   23822   CATCAGAAAATTCATCATGGTGTGAAACCCTACAAATGTAAAGAATGTGGAAAGGCTTTT   23881

Query     808   TTTTGGGGCTCAAGCCTTGCTAAACATGAGATAATTCATACAGGTGAGAAACCTTATAAA   867
                 |     | |||||  |||     ||||| |||  |||||||| | |||||||||| |||||
Sbjct   23882   GGTCATCGTTCAAGTCTTTACCAACATAAGAAAATTCATTCTGGTGAGAAACCATATAAA   23941

Query     868   TGTAAAGAATGTGGGAAGGCCTTCAGTCGTGGCTATCAACTTACTCAGCATCAGAAAATC   927
                ||| || |||||||  ||||||||   |||  |||||| |||| | | |||||| | ||
Sbjct   23942   TGTGAACAATGTGAAAAGGCCTTTGTTCGCAGCTATCTACTTGTTGAACATCAAAGAAGT   24001

Query     928   CATACTGGTAAGAAACCTTATGAATGTAAAATATGTGGAAAGGCTTTTTGTTGGGGCTAT   987
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Query     988   CAACTTACTCGACATCAGATATTTCATACTGGTGAGAAACCCTATGAATGCAAGGAATGT   1047
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Sbjct   24062   AGCCTTCTTAAACATAAGAGAATTCATAGTAGTGAGAAACTCTATGATTGTAAGGATTGT   24121

Query    1048   GGGAAGGCTTTTAATTGCGGATCAAGTCTTATTCAACATGAAAGAATTCATACTGGTGAG   1107
                || |||||| |||   | | || ||    |||| || ||| | ||||||||||||||||||
Sbjct   24122   GGAAAGGCCTTTTGTAGAGGCTCTCAACTTACACAGCATCAGAGAATTCATACTGGTGAG   24181

Query    1108   AAACCTTATGAATGTAAAGAATGTGGAAAGGCCTTTAGTCGTGGCTATCACCTTTCTCAA   1167
```

Exhibit I

Blast 2 Sequences results

PubMed   Entrez   BLAST   OMIM   Taxonomy   Structure

BLAST 2 SEQUENCES RESULTS VERSION BLASTP 2.2.16 [Mar-25-2007]

Matrix BLOSUM62 ▼ gap open: 11 gap extension: 1
x_dropoff: 0 expect: 10.0000 wordsize: 3 Filter ☐ View option Standard ▼
Masking character option X for protein, n for nucleotide ▼ Masking color option Black ▼
☐ Show CDS translation   Align

Sequence 1: lcl|SID3_ORF   Protein encoded by SEQ ID NO:3.
Length = 517 (1 .. 517)

Sequence 2: lcl|SID4   Protein of SEQ ID NO:4.
Length = 518 (1 .. 518)
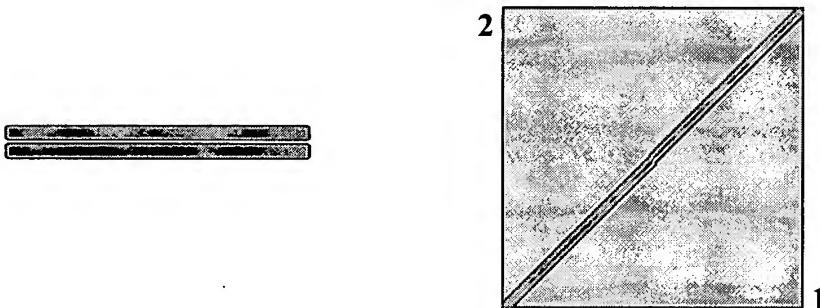
NOTE:Bitscore and expect value are calculated based on the size of the nr database.
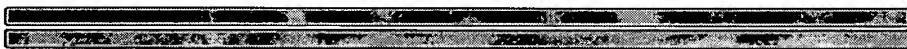
```
Score =  957 bits (2475),  Expect = 0.0, Method: Composition-based stats.
Identities = 516/517 (99%), Positives = 516/517 (99%), Gaps = 0/517 (0%)

Query   1    MTDGLVTFRDVAIDFSQEEWECLDPAQRDLYVDVMLENYSNLVSLDLESKTYETKKYFSE   60
             MTDGLVTFRDVAIDFSQEEWECLDPAQRDLYVDVMLENYSNLVSLDLESKTYETKK FSE
Sbjct   1    MTDGLVTFRDVAIDFSQEEWECLDPAQRDLYVDVMLENYSNLVSLDLESKTYETKKIFSE   60

Query   61   NDIFEINFSQWEMKDKSKTLGLEASIFRNNWKCKSIFEGLKGHQEGYFSQMIISYEKIPS   120
             NDIFEINFSQWEMKDKSKTLGLEASIFRNNWKCKSIFEGLKGHQEGYFSQMIISYEKIPS
Sbjct   61   NDIFEINFSQWEMKDKSKTLGLEASIFRNNWKCKSIFEGLKGHQEGYFSQMIISYEKIPS   120

Query   121  YRKSKSLTPHQRIHNTEKSYVCKECGKACSHGSKLVQHERTHTAEKHFECKECGKNYLSA   180
             YRKSKSLTPHQRIHNTEKSYVCKECGKACSHGSKLVQHERTHTAEKHFECKECGKNYLSA
Sbjct   121  YRKSKSLTPHQRIHNTEKSYVCKECGKACSHGSKLVQHERTHTAEKHFECKECGKNYLSA   180

Query   181  YQLNVHQRFHTGEKPYECKECGKTFSWGSSLVKHERIHTGEKPYECKECGKAFSRGYHLT   240
             YQLNVHQRFHTGEKPYECKECGKTFSWGSSLVKHERIHTGEKPYECKECGKAFSRGYHLT
Sbjct   181  YQLNVHQRFHTGEKPYECKECGKTFSWGSSLVKHERIHTGEKPYECKECGKAFSRGYHLT   240
```

```
Query  241  QHQKIHIGVKSYKCKECGKAFFWGSSLAKHEIIHTGEKPYKCKECGKAFSRGYQLTQHQK  300
            QHQKIHIGVKSYKCKECGKAFFWGSSLAKHEIIHTGEKPYKCKECGKAFSRGYQLTQHQK
Sbjct  241  QHQKIHIGVKSYKCKECGKAFFWGSSLAKHEIIHTGEKPYKCKECGKAFSRGYQLTQHQK  300

Query  301  IHTGKKPYECKICGKAFCWGYQLTRHQIFHTGEKPYECKECGKAFNCGSSLIQHERIHTG  360
            IHTGKKPYECKICGKAFCWGYQLTRHQIFHTGEKPYECKECGKAFNCGSSLIQHERIHTG
Sbjct  301  IHTGKKPYECKICGKAFCWGYQLTRHQIFHTGEKPYECKECGKAFNCGSSLIQHERIHTG  360

Query  361  EKPYECKECGKAFSRGYHLSQHQKIHTGEKPFECKECGKAFSWGSSLVKHERVHTGEKSH  420
            EKPYECKECGKAFSRGYHLSQHQKIHTGEKPFECKECGKAFSWGSSLVKHERVHTGEKSH
Sbjct  361  EKPYECKECGKAFSRGYHLSQHQKIHTGEKPFECKECGKAFSWGSSLVKHERVHTGEKSH  420

Query  421  ECKECGKTFCSGYQLTRHQVFHTGEKPYECKECGKAFNCGSSLVQHERIHTGEKPYECKE  480
            ECKECGKTFCSGYQLTRHQVFHTGEKPYECKECGKAFNCGSSLVQHERIHTGEKPYECKE
Sbjct  421  ECKECGKTFCSGYQLTRHQVFHTGEKPYECKECGKAFNCGSSLVQHERIHTGEKPYECKE  480

Query  481  CGRLLVVAITLLNIRKFIPVRNLSNVRNVGRPSVGVQ  517
            CGRLLVVAITLLNIRKFIPVRNLSNVRNVGRPSVGVQ
Sbjct  481  CGRLLVVAITLLNIRKFIPVRNLSNVRNVGRPSVGVQ  517
```

CPU time: 0.02 user secs.   0.01 sys. secs   0.03 total secs.